NIST Technicalendar

UNITED STATES DEPARTMENT OF COMMERCE
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The *NIST Technicalendar*, issued each Friday, covers scheduled events which are of interest primarily to the NIST staff. All boxed items/notices for inclusion should be in WordPerfect 5.1, 6.1, or ASCII format and MUST be received by 12:00 NOON each Wednesday unless otherwise stated in the *NIST Technicalendar*. Items for inclusion and requests for copies of this calendar should be sent to Ms. Sharon Mingo, Editor, Building 820, Room 125, National Institute of Standards and Technology, Gaithersburg, MD 20899-0001, (Telephone: 301/975-3570; FAX: 301/926-4431; or E-mail: mingo@micf.nist.gov).

All lectures and meetings are open unless otherwise stated.

FEBRUARY 12 TO FEBRUARY 16, 1996

MEETINGS AT NIST

2/12 MONDAY 10:30 a.m. BUILDING MATERIALS DIVISION SEMINAR: Experiences With New Zealand's Performance-Based Building Code, W. Sharman, Research Services, Building Research Association of New Zealand. Rm. B221, Building Research Bldg. (NIST contact: G. Frohnsdorff, 975-6706.)

2/12 MONDAY 11:00 a.m. IONIZING RADIATION DIVISION SEMINAR: Adaptive Response and a Paradigm of Radiation Protection, M. Waligorski, The Maria Skladowski-Curie Memorial Centre of Oncology, Krakow, Poland. Rm. C301, Radiation Physics Bldg. (NIST contact: W.L. McLaughlin, 975-5559.)

2/13 TUESDAY 1:30 p.m. THERMOPHYSICS DIVISION SIMULATION SEMINAR: Molecular Dynamics Simulations of Model Biological Membranes, D. Tobias, Reactor Division, NIST, Gaithersburg, MD. Rm. B165, Physics Bldg. (NIST contact: R. Mountain, 975-2484.)

2/16 FRIDAY 1:30 p.m. ATOMIC PHYSICS DIVISION SEMINAR: Bragg Scattering of Laser Light From Trapped-Ion Crystals W. Itano, NIST, Boulder, CO. Rm.B165, Physics Bldg. (NIST contact: B. Phillips, 975-6554.)

RESCHEDULED *- NIST 95-96 Colloquium Series*

Issues Surrounding the Design of the Multicenter Study of Hydroxyurea in Sickle Cell Anemia
Duane Robina Bonds, M.D., Group Leader, Sickle Cell Disease Scientific Research Group
and
Myron Waclawiw, Ph.D., Mathematical Biostatistician
National Heart, Lung, and Blood Institute, National Institutes of Health

***FRIDAY*, February 9, 1996**
10:30 a.m. - 11:30 a.m., Green Auditorium, Administration Building

Although sickle cell anemia was the first blood disease described at the molecular level, there was no effective therapy available until January 1995 when the multicenter trial results were announced. This clinical trial was designed as a double-blind, placebo-controlled trial which recruited 299 patients from 21 clinical sites around the country. Because the primary endpoint involved counting multiple episodic events and deciding when the data would be considered complete, the statistical issues involved in the design of the trial and the stopping rules used to end the trial 4 months early made it a unique experience. This lecture will give a brief overview of the design of the multicenter trial, the assumptions used, the power calculations, and the stochastic curtailment used to assist in the decision to stop the trial early.

Anyone requiring special assistance should contact Lillian Ware on 975-4203. Colloquiums are videotaped and available in the Research Information Center.

Joint Chemical Science and Technology Laboratory - Sigma Xi Colloquium

MOLECULAR BEAUTY

Roald Hoffmann*
Department of Chemistry, Cornell University, Ithaca, NY

Tuesday, February 13, 1996, 10:30 a.m., Green Auditorium, Administration Building

What makes molecules beautiful? It may be their simplicity, a symmetrical structure. Or it may be their complexity, the richness of structural detail that is required for specific function. Sometimes the beauty of a molecule may be hidden, to be revealed only when its position in a sequence of transformations is made clear. Novelty, surprise, utility also play a role in molecular aesthetics, which is the subject of this lecture.

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*Professor Hoffmann is a corecipient of the 1981 Nobel Prize in Chemistry, the author of two volumes of poetry, of the Smithsonian Institution Press book "Chemistry Imagined," a unique art/science/literature collaboration with artist Vivian Torrence, and most recently, of "The Same and Not the Same," described in the "New York Times Book Review" (12/17/95), as "roughly equal parts art and science .... a primer for chemistry haters."

For further information contact Bill Gadzuk, 975-2548 or Bill MacCrehan, 957-3122.

The Office of International and Academic Affairs (OIAA) has information on a program administered by the National Research Council (NRC) which supports cooperation with scientists from the Newly Independent States (NIS) of the former Soviet Union. The Cooperation in Applied Science and Technology program provides incentive grants to U.S. scientists to host NIS colleagues for a period of 6 to 12 months to carry out joint research. More detailed information on this program can be found on the NRC homepage: http//www.nas.edu or contact Claire Saundry, OIAA at e-mail, chubbard@micf.nist.gov or 975-2386.

THE REVISED SCHEDULE FOR THE NIST/NRC POSTDOC APPLICATION IS AS FOLLOWS:

February 1, 1996, Deadline for NRC's receipt of applicants' two page application form and a rough draft proposal.

February 15, 1996, Deadline for NRC's receipt of applicants' supporting documents and the final proposal.

February 15, 1996, Deadline for NIST Academic Affairs Office's receipt of "NRC Laboratory/Center Review Form" from NIST Postdoc advisors.

Applicants should send copies of all related materials to their NIST advisors as soon as possible. Although we have this extension, the NIST Staff should urge all applicants to submit all forms as early as possible.

For additional information get in touch with Jack Hsia, 975-306 or email, jackh@nist.gov.

Physics Laboratory Colloquium

Ionizing Radiation for the Treatment of Heart Disease: A New Frontier for Dosimetry

Dr. Christopher G. Soares
NIST, Physics Laboratory, Ionizing Radiation Division

February 16, 1996, 11:00 a.m., Bldg. 221, Rm. B165

An exciting development in coronary medicine is the potential for the use of ionizing radiation for the prevention of restenosis (re-closing) of blood vessels after cardiac and peripheral artery interventional procedures such as angioplasty, atherectomy and stent implantation. These procedures are performed over 400,000 times in the U.S. each year, and in about 30% of the cases, restenosis occurs, requiring another treatment. Research has shown that a dose of about 10 Gy, delivered to the wall of the blood vessel after such procedures have been performed, is effective in inhibiting restenosis. The dosimetry of the sources used in this therapy posed difficult challenges since the source dimensions and distance at the which doses must be specified are significantly smaller than conventional brachytherapy for cancer treatment. The efforts NIST has taken in the calibration of one of the catheter-based beta-particle sources to be used for this therapy are described. Routine use of radiation for the prevention of restenosis would result in estimated savings in U.S. health care costs of between $0.8 and $2 billion annually.

NIST Contact: Dr. Christopher G. Soares, 975-5589.

Advance Notice

NIST Nanostructure Science Colloquium Series

February 20, 1996, 10:30 a.m.

Lecture Room A, Administration Building

This colloquium is the fourth of a series focused on research in the regime of nanometer sized dimensions. Colloquia will be held each month. A schedule of future colloquia is available at http://physics.nist.gov/www/nano.html and you may register to receive future announcements by e-mail by sending a request to kim@epg.nist.gov.

OPTICAL MICROSCOPY AT 10 ANGSTROM RESOLUTION

Kumar Wickramasinghe, IBM T.J. Watson Research Center

Interferometric near-field optical microscopy achieving a resolution of 10 angstrom is demonstrated. The scattered electric field variation due to a vibrating probe tip in close proximity to a sample surface is measured by encoding it as a modulation in the optical phase of one arm of an interferometer. Unlike in regular near-field optical microscopes where the contrast results from a weak source (or aperture) dipole interacting with the polarizability of the sample, the present form of imaging relies on a fundamentally different contrast mechanism; sensing the dipole-dipole coupling of two externally driven dipoles (i.e. tip and sample dipoles) as we modulate their spacing. Recent results on applications of this technique will be presented.

Technical contact: Robert Celotta, 975-3710; Information contact: Kim Chaney, 975-3707.

Advance Notice

Radiometric Physics Division

POLARIZATION-ENTANGLED PHOTONS: THE NEXT GENERATION

Paul Kwiat, Los Alamos National Laboratory

Thursday, February 22, 1996, 10:00 a.m.

Bldg. 221, Rm. B165

Spontaneous parametric down-conversion with type-II phase-matching produces an intense source of polarization-entangled photon pairs, which violated Bell's inequality by over 100 standard deviations, in less than 5 minutes! Armed with such a source, one can investigate a number of interesting phenomena in quantum communication. For example, analysis of the 4 preparable Bell-states allows coding of 2 bits into a single 2-state particle. One can also contemplate the production of new, never-before-seen states of light.

Contact Person: Alan Migdall, 975-2331.

Advance Notice

NIST 95-96 Colloquium Series

VERY COLD INDEED: THE NANOKELVIN PHYSICS OF BOSE EINSTEIN CONDENSATION

Eric Cornell

Fellow of JILA, NIST Physics Laboratory

1995 Stratton Award Winner

FRIDAY, February 23, 1996

10:30 a.m. - 11:30 a.m., Green Auditorium, Administration Building

As atoms get colder, they start to behave more like waves and less like particles. Cool a cloud of identical atoms so cold that the wave of each atom starts to overlap with the wave of its neighbor atom, and all of sudden you wind up with a sort of quantum identity crisis known as Bose Einstein Condensation. How do we get something that cold? And what is the nature of the strange goop that results?

Anyone requiring special assistance should contact Lillian Ware on 975-4203. Colloquiums are videotaped and available in the Research Information Center.

ADVANCE NOTICE and RESCHEDULE ANNOUNCEMENT

The Symposium on Usability Engineering: Industry-Government Collaboration for System Effectiveness and Efficiency originally scheduled for January 10, 1996, has been rescheduled for:

February 26, 1996, at NIST

Simply put, it is critical for government and industry, in designing new government computer systems and in redesigning legacy systems, to be aware of the best practices now available for ensuring the usability of such systems. This symposium will bring together industry and government to exchange information and strategies for achieving effectiveness, efficiency, and satisfaction in computer-based government systems.

Topics:
o Intro to Usability Engineering o Standards & Guidelines o Usability Trends in Gov. Sys. o Industry Strategies & Practices
o Success Stories o Special Issues for Complex Sys. o Costs and Benefits o Making Usability Work in the Org.
Audience:
o Project Development Managers o Technical Staff & Researchers o Government Contractors o COTS Product Vendors
o Procurement Officials o Consultants o Analysts & Engineers o Policymakers

Detailed Information: via web at: http://dsys.ncsl.nist.gov/pub/uesym/
Cost: $55 which includes lunch and materials.
Registration: contact Lori Phillips at 975-4513.
Organizers: L. Downey, NIST, Chair, 975-4659; Dr. S. Laskowski, NIST; E. Buie, CSC; Dr. R. Hartson, Virginia Tech.

IMPORTANT NOTE: NIST employees who plan to attend are required to register and pay the $55 fee.

Advance Notice
Information Technology Laboratory Statistical Engineering Division

COURSE ANNOUNCEMENT
Statistics for Scientists and Engineers: Introduction to Statistical Concepts
Mark G. Vangel

This course, the first in a unified program of short courses in applied statistics for the NIST community, will be given Monday mornings, 9-12, on February 26, March 4, and March 11, in Lecture Room E. It will consist of an elementary introduction to statistical concepts, with an emphasis on applications to measurement.
For more information on this and later courses in this series, contact Mark Vangel at 975-3208, vangel@cam.nist.gov, or see the event calendar under the Statistical Engineering Division home page at URL http://www.cam.nist.gov/caml/sed/. Registration is $50, and a form DN-11 should be submitted to Pat O'Connor in the Training Office, Admin. A123, by COB February 21.

Advance Notice
THIRD ANNUAL POST-DOCTORAL POSTER PRESENTATION SPONSORED BY SIGMA XI

Thursday, February 29, 1996, 11 a.m. - 3 p.m., Employee's Lounge

The NIST Chapter of Sigma Xi cordially invites all staff members to visit the poster presentations by current NIST Post-Doctoral Research Associates. The poster presentation will be accompanied by refreshments. Please come and welcome our new Post-Docs and learn about their exciting research.

For more information please contact Barbara C. Levin (975-6682, bclevin@enh.nist.gov).

MEETINGS ELSEWHERE

2/12—MONDAY 11:00 a.m. CARNEGIE INSTITUTION OF WASHINGTON GEOPHYSICAL LAB. (GL) SEMINAR: Giant Planet Formation—and on the Seventh Day..., A. Boss, Dept of Terrestrial Magnetism (DTM). Seminar Rm., Main Bldg., GL-DTM Grounds, Carnegie Institution of Washington, Washington, DC. (For further information call 202/686-2410.)

2/12—MONDAY 2:30 p.m. NAVAL RESEARCH LAB. (NRL) CONDENSED MATTER AND RADIATION SCIENCES DIVISION SEMINAR: The Orbital Ordering in Mott Insulators, V. Anisimov, Institute of Metal Physics, Ekaterinburg, Russia. Rm. 127, Bldg. 65, NRL, Washington, DC. (For further information call W.E. Pickett, 202/404-8631.)

2/12—MONDAY 4:15 p.m. GEORGETOWN UNIV. CHEMISTRY DEPT. SEMINAR: TBA, I. Sagi, Weizmann Institute. Reiss 262, Georgetown Univ., Washington, DC. (For further information call Dr. Pope, 202/687-6073.)

2/13—TUESDAY 1:15 p.m. UNIV. OF MARYLAND STATISTICAL PHYSICS SEMINAR: Fluctuations of Steps on Surfaces: From Equilibrium Analysis to Step Unbunching and Cluster Diffusion, T.L. Einstein, Physics Dept., Univ. Of Maryland. Rm. 1116, IPST Bldg., Univ. of Maryland, College Park, MD. (For further information call T.R. Kirkpatrick, 301/401-4801 or M.E. Fisher, 301/405-4820.)

2/13—TUESDAY 8:00 p.m. IEEE LASERS AND ELECTROOPTICS SOCIETY MONTHLY CHAPTER MEETING: Electro-optic and Acousto-optic Devices for Communication, Processing and Display of Data, J.N. Lee, Naval Research Lab., Washington, DC. Rm. 2460, A.V. Williams Bldg., Univ. of Maryland, College Park, MD. Dinner preceding meeting. (For further information call H. Heaton, 301/953-5025.)

2/14—WEDNESDAY 4:00 p.m. JOHNS HOPKINS UNIV. MATERIALS SCIENCE AND ENGINEERING SEMINAR: Growth Structure and Mechanical Properties of Nitride Superlattices, S. Barnett, Northwestern Univ., Evanston, IL. Maryland Hall 110, The Johns Hopkins Univ., Baltimore, MD. (For further information call M. Weaver, 410/516-8145.)

2/14—WEDNESDAY 4:00 p.m. UNIV. OF MARYLAND CHEMICAL PHYSICS/PHYSICAL CHEMISTRY/LAMOS SEMINAR: Scientific Activity at the Vavilov State Optical Institute and Generation of Superintense Light Fields and Their Application to Matter, A. Mak and A. Andreev, S.I. Vavilov State Optical Institute, St Petersburg, Russia. Rm. 1116, IPST Bldg., Univ. of Maryland, College Park, MD.

2/15—THURSDAY 4:00 p.m. CATHOLIC UNIV. OF AMERICA (CUA) PHYSICS DEPT. COLLOQUIUM: "I Can Do That," Hans Bethe's First 60 Years at Cornell Video Tape Showing, D. Sober, Physics Dept., CUA. Rm. 106, Hannan Hall, CUA, Washington, DC. (For further information call D. Sober, 202/319-5856.)

2/15—THURSDAY 7:00 p.m. WASHINGTON CHROMATOGRAPHY DISCUSSION GROUP MEETING: Shape Selectivity in Liquid Chromatography, L.C. Sander, NIST, Gaithersburg, MD. Hewlett Packard Regional Office, Rockville, MD. (For further information call J.E. Cunningham, 301/898-3772.)

2/16—FRIDAY 3:00 p.m. UNIV. OF MARYLAND ANE SEMINAR: Cd: A Nutrient and a Toxin for Marine Phytoplankton, J. Lee, Dept. of Chemistry and Biochemistry, Univ. of Maryland. Rm. 1325, Chemistry Bldg., Univ. of Maryland, College Park, MD.

2/16—FRIDAY 4:15 p.m. GEORGETOWN UNIV. CHEMISTRY DEPT. SEMINAR: Thermal Decomposition of Polyoxotungstates, H.J. Lunk, Osram Sylvania Inc., Towanda, PA. Reiss 264, Georgetown Univ., Washington, DC. (For further information call Dr. Pope/Dr. Wassermann, 202/687-6073.)

The spring season continues for the TIGR-NIST Distinguished Speakers Series!

The TIGR-NIST Distinguished Speakers Series is titled: **DNA, GENETICS, and BIOTECHNOLOGY**

HUMAN GENE THERAPY: HURDLES AND FUTURE DIRECTIONS
Dr. James M. Wilson, M.D., Ph.D.
Thursday, February 15th at 4 PM

Dr. Wilson is Director of the Institute for Human Gene Therapy at the University of Pennsylvania Medical Center.

This season the TIGR-NIST Distinguished Speakers Series is held in the TIGR Conference Room, 9712 Medical Center Drive, Rockville. An informal reception follows Dr. Smith's talk and provides an opportunity for interested participants to talk with him.

For information contact Catherine O'Connell at NIST, 301/975-3123 or Damar Hawkins at TIGR, 301/838-0200. Directions and series information is also available via the Internet at: http://www.tigr.org/conference/conference.html.

TALKS BY NIST PERSONNEL

CHIANG, M.Y.: "On the Localization of Fracture in Highly Constrained Polymeric Interlayer Subjected to Mode II Loading," North Carolina State Univ., Raleigh, NC, and 19th Annual Meeting of the Adhesion Society, Myrtle Beach, SC, 2/16 and 2/19/96.

ERMI, B.D.: "Model Solutions for Studies of Salt-Free Polyelectrolytes," Gordon Research Conf., Colony Harbortown Marina Hotel, Ventura, CA, 2/13/96.

HUANG, P.H.: "Recent Developments in Humidity Measurements and Standards," American Society of Heating Refrigeration and Engineers Committee on Thermodynamics and Physchrometrics, Georgia World Conf. Center, Atlanta, Ga, 2/18/96.

LOCASCIO-BROWN, L.: "The Use of Liposomes in Capillary Electrophoresis," Chemistry Dept. Seminar, Univ. of Massachusetts, Amherst, MA, 2/15/96.

NORRIS, J.E.: "Ozone Calibration at NIST," The Swiss Federal Labs. for Materials Testing and Research (EMPA), Dubendorf, Switzerland, 2/2/96.

PITTS, W.M.: "Real-Time Concentration Measurements of Halon 1301 and Possible Alternatives,"Navy Technology Center for Safety and Survivability, Naval Research Lab., Washington, DC, 2/1/96.

ROBERSON, S.: "Certification of K-411 Glass Microspheres With Electron Probe Microanalysis (EPMA)," International Union of Microbeam Analysis Sciences, Univ. Of Sydney, Australia, 2/8/96.

STEINER, B. (Co-author: G. Fogarty): "Order in Photonic Crystals: High Resolution Synchrotron X-Ray Diffraction Imaging of III-VS, II-VIS, and Photorefractives," Dept. of Electrical Engineering, Univ. of Maryland, College Park, MD, 2/14/96.

VALACHOVIC, D.: "Highly and Weakly Charged Polyelectrolytes in Low-Salt Solutions," Gordon Research Conf., Colony Harbortown Marina Hotel, Ventura, CA, 2/13/96.